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May 20, 1997

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Federal Communications Commission
Office of Secretary

BY HAND DELIVERY

William F. Caton
Acting Secretary
Federal Communications Commission
1919 M St., N.W., Room 222
Washington, D.C. 20554

Re: Ex Parte Statement – IB Docket No. 96-220

Dear Mr. Caton:

On behalf of GE Starsys Global Positioning, Inc. ("GE Starsys"), this is to inform you that Alan Renshaw and Ken Newcomer of GE Starsys and Peter Rohrbach and I of Hogan & Hartson, L.L.P. met today with Cassandra Thomas, Deputy Chief, Satellite and Radiocommunication Division, International Bureau, and Harold Ng of the Satellite and Radiocommunication Division. The attached material was used in the discussion. Pursuant to the Commission's rules, I am providing two copies of this letter to the Office of the Secretary.

Respectfully submitted,

David L. Sieradzki

David L. Sieradzki
Counsel for GE Starsys

Enclosures

cc: Cassandra Thomas
Harold Ng
Parties in IB Docket No. 96-220

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Two-Way Remote Positioning and Messaging Services

GE STARSYS

**137-138 MHz BAND SHARING CRITERIA
AND IMPACTS**

OF

SECOND ROUND LICENSING

(A/B PLAN)

GE STARSYS
20 May 1997

137-138 MHz BAND SHARING

- **137-138 MHz BAND SHARING CRITERIA:**

- A. While NOAA Operates in the Center Band Channels (first stage)**

1. Maximum 1/3 degradation to Starsys link margin in 137-138 MHz band (-.77 dB)
 - includes effect of Orbcomm operating one feederlink and one service link in sidelobes, E-Sat
 - allows maximum of four low-power FDMA feeder/service links operating in sidelobes of Starsys ground station antenna in the existing NOAA channels
 - = using 8 dBW e.i.r.p. at satellite altitude of 775 km or equivalent
 - = multiple satellites using same feederlink channel operate TDMA with effect of one signal power
2. One additional SSMA signal authorized in 137-138 MHz band
 - using no more than GE Starsys pfd: - 156.1 dB(W/m²/4/kHz)
3. Second round (FDMA & SSMA) systems stop transmitting when in Starsys main beam
4. No restrictions on feederlinks, service links in secondary allocation areas of 137-138 MHz band
 - 137.025-137.175 & 137.825-138.0 MHz
5. GE Starsys operates with low sidelobe ground station antenna similar to that of Orbcomm
 - up to 25.5 degree half-beam width



SHARING SCENARIOS & IMPACTS

Two-Way Remote Positioning and Messaging Services

- **FIRST STAGE IMPACTS ON STARSYS:**

- 2nd Round FDMA system (4 channels in NOAA bands), Orbcomm & E-SAT in sidelobes:

.82 dB margin degrade = 36 % loss
all in sidelobes is optimum condition

- Orbcomm in main beam:
others in sidelobes

2.66 dB margin degrade
100 % loss of margin + some capacity
25.5 deg. antenna = 18% of time in main beam (3x)

- Other channels in secondary area

almost no impact on Starsys



Two-Way Remote Positioning and Messaging Services

SHARING SCENARIOS & IMPACTS

- **B. NOAA MOVES TO SIDES OF 137-138 MHz BAND (STAGE 2)**

- GE Starsys increases power by 3 dB
 - link margin increases to 2.9 dB
 - 1/3 degradation = .97 dB

- **IMPACTS ON STARSYS:**

- 2nd Round System, Orbcomm & E-SAT in sidelobes:
 - .49 dB margin degrade = 17% loss of margin
all in sidelobes is optimum condition
- 137.5 MHz channel in main beam at 5 dBW:
 - exceeds criteria, must shut down in main beam
 - 1.1 dB margin degrade = 38% loss of margin
- Other three channels transmit at 5 dBW in main beam:
 - .75 to .91 dB degrade = 26 to 31% loss
- Channel trade-offs require coordination with Starsys
 - must remain within 1/3 degradation criteria
- Orbcomm in main beam:
 - 1.72 dB degrade = 75% loss of margin



Two-Way Remote Positioning and Messaging Services

A/B PLAN IMPACTS SUMMARY

- **PRIOR TO NOAA MOVE TO SIDES OF 137-138 MHz BAND**

- Primary allocation area of band:

FDMA system limited to four simultaneous service / feeder links operating at 8 dBW when operating in sidelobes of Starsys ground station antenna. Coordination required.

FDMA channels stop operating when in main beam of Starsys ground station antenna.

One CDMA system limited to same pfd at ground as Starsys, not operate in main beam of Starsys ground station antenna. Coordination required.

- Secondary allocation area of band:

No restrictions on channels in secondary area of band. No coordination required.



Two-Way Remote Positioning and Messaging Services

A/B PLAN IMPACTS SUMMARY (cont'd)

- **AFTER NOAA MOVE TO SIDES OF 137-138 MHz BAND**

- Primary allocation area of band:

When Starsys allowed to increase power, downlinks operating in old NOAA channels can operate at 12.5 dBW (computed at 775 km) when in sidelobes of Starsys ground station antenna.

Channels at 137.35, 137.62, 137.77 can operate at 8 dBW when in mainbeam of Starsys antenna.

Channels at 137.5 MHz must shut down when in Starsys main beam.

Channel trade-offs permissible, must not exceed 1/3 degradation of Starsys link margin.

Coordination with Starsys required.

- Secondary allocation area of band:

No restrictions, no coordination necessary.